

U. S. DEPARTMENT OF AGRICULTURE.

R E P O R T

OF

THE POMOLOGIST

FOR

1898.

BY

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[FROM THE REPORT OF THE SECRETARY OF AGRICULTURE.]



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REPORT OF THE POMOLOGIST.

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF POMOLOGY,
Washington, D. C., August 25, 1898.

SIR: I have the honor to transmit herewith a report of the operations of the Division of Pomology for the fiscal year ending June 30, 1898, together with a brief outline of the work of the current year, and a statement of proposed plans and estimates recommended for the next fiscal year.

Respectfully,

G. B. BRACKETT,
Pomologist.

Hon. JAMES WILSON, *Secretary.*

WORK OF THE YEAR.

The routine work which devolves upon the division continues heavy, and during the past year has consumed a large portion of the time and energy of the division force. As in former years, correspondence, including the investigation and reporting upon subjects submitted by persons interested in the production, shipping, marketing, or consumption of fruits, has occupied the most important place. The receipts of specimen fruits for examination and identification were about the same in number as during the previous fiscal year. During the year 485 descriptions were added to the files, more than 200 water-color paintings were made, and about 75 wax models were completed; a considerable number of photographic negatives of fruits and fruit trees and orchard scenes were also secured.

The accurate description and illustration of fruits by the various methods mentioned above involves a considerable expenditure of time by skilled employees, but in view of the current and future value and necessity of such forms of illustration in the classification and identification of varieties it is believed to be wisely and profitably expended.

DISTRIBUTION OF TREES, SCIONS, CUTTINGS, PLANTS, AND SEEDS.

During the year about 200 lots of trees, scions, cuttings, plants, vines, and seeds of fruit-bearing varieties and species have been placed with experimenters in various portions of the country. The distribution included 185 varieties representing 26 species.

COMPARISON OF METHODS OF ROOT GRAFTING.

The second year of the nursery period of the second comparative test of methods of root grafting the apple was completed. In this test 10 varieties selected as representative of the principal commercial apple districts were included, the details of the experiment being, in the main, identical with those recorded in the report of 1897 (p. 149).

In the spring of 1898, after the trees had been measured and graded alternate ones were taken up from the nursery rows and gathered into sets of varieties, which were placed with experiment stations and individuals in Indiana, Maine, Maryland, Massachusetts, Missouri, and Nebraska for planting in orchards. The remainder of the trees will be held in the nursery until the end of the growing season of 1898, when they will be similarly treated. A detailed account of the experiment will be published hereafter.

CARD CATALOGUE OF FRUIT VARIETIES.

The preparation of the descriptive catalogue of the fruit varieties that have been described in the standard pomological works published in the United States has been continued by Mr. T. T. Lyon, of Michigan, the special agent of the division. During the year the catalogue of pears has been completed. It contains cards for more than 1,500 varieties and more than 3,700 synonyms. Mr. Lyon is now engaged upon the catalogue of peaches. Certain changes have been made in the original plan after due consideration and experience in the work, which, though increasing the labor of preparation, will add greatly to the value and accuracy of the catalogue when completed.

EXHIBIT AT THE TRANS-MISSISSIPPI INTERNATIONAL EXPOSITION AT OMAHA.

The exhibit of fruit models made by the division at Omaha was planned with the view of furnishing information to observant visitors in regard to the appearance and varietal characteristics of important fruits. One group illustrated the principal commercial varieties of apple grown in the trans-Mississippi region; another the varieties of apple adapted to dessert and home use in the same region, while a third was composed of Russian varieties and crabs. Still another group contained specimens of new and little-known varieties of the apple from various portions of the United States. A miscellaneous collection contained specimens of the leading commercial and dessert fruits of the United States.

A large collection of water-color paintings, photographs, and descriptive sheets illustrating the methods of fruit description practiced in the Division of Pomology was shown.

A special feature of the exhibit was a collection of sun-dried and evaporated fruits of the United States, illustrating the commercial grading and packing of such fruits for market.

This collection contained about 200 specimen packages and 32 commercial packages.

VARIETAL HERBARIUM.

The services of a skilled mounter of plants having been secured, more than 1,300 herbarium specimens of fruit varieties have been mounted during the year and stored in suitable cases, where they are

convenient of access. This collection adds materially to the equipment of the division in identifying and classifying varieties.

MAPS OF FRUIT DISTRICTS.

Late in the year a beginning was made in the mapping of fruit districts, provisional maps of the country showing the principal areas of production of apples, peaches, prunes, raisin grapes, oranges, lemons, almonds, walnuts, and cocoanuts having been prepared.

ADDRESSES AND PUBLICATIONS.

During the year addresses were delivered by the Pomologist or the Assistant Pomologist at the meeting of the American Pomological Society at Columbus, Ohio, and at meetings of the State and district horticultural societies in New Jersey, Maryland, and Virginia.

By a cooperative arrangement made during the incumbency of my predecessor, Prof. S. B. Heiges, an edition of 15,000 copies of the "Catalogue of fruits of the American Pomological Society" was published as Bulletin No. 6 of this division. The catalogue was revised by a committee of the society of which Mr. T. T. Lyon, of Michigan, was chairman. The demand for this bulletin was so great that the issue of a second edition of 2,000 copies became necessary within a few weeks after it appeared.

This catalogue, which was first published by the society in 1852 and has been revised from time to time for distribution among its members, has long been recognized as the standard authority upon pomological nomenclature and the most comprehensive guide to the adaptability of varieties and their relative value for planting in those fruit-growing portions of the country where they have been tested and reported on by fruit growers.

From the nature of the case this catalogue will need to be occasionally revised, as longer experience and fuller information make changes necessary. Covering the entire country as it does, it can hardly be expected that it will ever reach that state of accuracy and exactness which would make it a guide to be blindly followed by an inexperienced planter, but it is believed that it will become a most valuable index to the fruit industries of the country as well as an efficient agent in the simplification and standardizing of fruit nomenclature. Recognizing the fact that many changes in the catalogue were necessary and that they should be promptly made, the division and the society, through a committee, have already entered upon a cooperative revision, which it is hoped will be ready for publication during the present fiscal year. In this revised edition it is expected that the adaptability of varieties to the newer fruit districts, particularly those of the Rocky Mountain and Pacific coast States, will be more fully set forth than in former editions of the catalogue.

An edition of 10,000 copies of a bulletin entitled "The fruit industry," prepared by the Assistant Pomologist, was published as Bulletin No. 7 of the division series. Part of the matter contained in it had previously appeared in the form of an article in the Yearbook of the Department for 1897, but the subject was regarded as of sufficient importance to justify its publication in bulletin form, especially as the number of copies of the Yearbook at the disposal of the Department is limited. A third edition of 1,000 copies of the "Report on nut culture" was published during the year.

SUNDY INVESTIGATIONS DURING THE YEAR.

In recognition of the lack of definite knowledge concerning the fruit districts of the Pacific slope a special investigation of that subject was made, the results of which will be included in the next revision of the fruit catalogue, which it is expected will be published during the coming fiscal year. For this purpose, Prof. E. J. Wickson, of the University of California, was appointed as special agent of the division for a period of six months. Prof. W. H. Ragan, of Greencastle, Ind., who is chairman of committee on revision of catalogue of the American Pomological Society, and whose work upon that catalogue consumes a large portion of his time, was made a special agent of the division for the term of three months in recognition of the cooperative work undertaken by this division with the society in the revision of this catalogue.

CURRENT WORK.

The nursery period of the second comparative test of methods of root grafting the apple, which, for various reasons was continued one season longer than was originally intended, will be completed during the year.

The systematic collection and mounting of material for the varietal herbarium which was begun late in the last fiscal year will be continued. Through the kindness of Mr. J. W. Kerr, of Denton, Md., herbarium specimens of 243 named varieties of native plum have been added to the collection. Comprehensive collections of varieties of other fruits will be made whenever opportunities to secure them arise, while the receipts of specimens of single varieties by mail from time to time are carefully preserved and recorded.

The state of war existing between Spain and this country has prevented further negotiation for authentic stock of Jordan almond, but it is expected that in the near future such will be secured.

In cooperation with the newly established Section of Seed and Plant Introduction an investigation of the present status of the cultivation of the European grape in the southeastern portions of the United States is being made with a view to determining whether renewed efforts in the introduction and cultivation of varieties of *Vitis vinifera* on resistant stocks in that region can be profitably undertaken.

Such preparatory work for the exhibit at the Paris Exposition in 1900 as can be done with the limited force and appropriation at the command of the Division of Pomology will be undertaken. The lack of sufficient available appropriation has prevented the attempt at furnishing experiment stations and agricultural colleges with duplicate sets of models of fruits in the manner proposed in the reports of 1896 and 1897. Such sets are desired by the horticulturists of many stations and colleges, and would undoubtedly be valuable additions to their equipment.

By cooperation with the Section of Seed and Plant Introduction, it is expected that many of the promising fruit-bearing species of foreign lands referred to in the report of last year will be speedily introduced for experimental cultivation in this country.

The limited appropriation available for field work continues to prevent several important lines of pomological investigation that could profitably be made.

PLANS FOR THE ENSUING YEAR.

The lines of investigation already undertaken are being conducted under decided disadvantage for lack of sufficient clerical and expert force, and there is therefore urgent need for larger appropriations for the work of this division.

In addition to the several subjects under investigation, work upon which will be continued, it is desired that during the next fiscal year a symmetrical and comprehensive representation worthy of the importance of the fruit industry of the United States shall be completed for exhibition at the Paris Exposition in 1900. It is believed that in the present state of our fruit industry great benefit to producers and shippers would result from a correct understanding of our pomological resources and a proper appreciation of our pomological products by the fruit-consuming millions of Europe. It is regretted that funds for the preparation of a suitable exhibit are not already available, as the limitation of the preparatory work to a single year necessarily narrows the scope and endangers the symmetry of an exhibit which from its character is dependent upon the seasonal vicissitudes of climate. Though the preparation of a suitable exhibit will involve a considerable interruption in the work of the division, it is believed, in view of the approaching possibility of overproduction of certain of our fruits, that it will greatly benefit the fruit industry as a whole by correcting popular misapprehension abroad and widening the foreign demand for American fruits and fruit products.

The recent and prospective increase in our fruit-producing areas through the acquisition of islands possessing the various gradations of tropical and subtropical climate makes necessary the prompt extension of pomological field investigation to such territory. The development of the dormant pomological resources of those islands will undoubtedly be undertaken promptly by private enterprise and capital, most of which will be drawn from the continental territory of the United States. Active work along these lines is, in fact, already under way. Such development will undoubtedly affect several of the important fruit industries already established within our borders, especially those of our own Gulf States, Arizona, and California. So long as the dissemination of information concerning the probabilities of fruit production in these little-known island regions is left to private parties interested in encouraging migration thither there will be uncertainty and unrest among fruit growers at home, which will hamper domestic development and unfavorably affect the value of investments in fruit lands in our subtropical districts. These investments amount at the present time to many millions of dollars. In addition to this the exaggeration of the prospective profits of fruit culture by persons interested in the sale of lands upon these islands is likely to result in disappointment and financial loss to many of our citizens. It is therefore deemed important that a thorough investigation of the pomological resources of the Hawaiian Islands and Puerto Rico be undertaken by this division at the earliest possible opportunity and that the results be promptly published for the information of our citizens, who are vitally and financially interested both as producers and consumers in the prospective fruit production of these islands.